WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a substrate having a well of a first conductivity type formed thereon;

a gate electrode formed on the substrate

a notched spacer formed of a first material alongside the gate electrode, the notched spacer having a notch formed along the surface of the substrate;

a first impurity region of the first conductivity type formed in the substrate at a first ion implant angle from the surface of the substrate, wherein only the notched spacer and the gate electrode act as a mask;

a second impurity region of a second conductivity type formed in the substrate at a second ion implant angle from the surface of the substrate, wherein the notched spacer and the gate electrode act as a mask;

a second spacer formed alongside the notched spacer; and

one or more additional impurity regions of the second conductivity type formed in a source/drain region in the substrate.

2. The semiconductor device of claim 1, wherein the notched spacer is formed of silicon dioxide.

3. The semiconductor device of claim 1, wherein the notched spacer is formed of silicon nitride.

4. The semiconductor device of claim 1, wherein the second spacer is formed of a material selected from the group consisting essentially of silicon dioxide and silicon nitride.

5. The semiconductor device of claim 1, wherein the notched spacer is completely removed along the surface of the substrate.

6. The semiconductor device of claim 1, wherein the first ion implant angle is oblique to the surface of the substrate.

7. The semiconductor device of claim 1, wherein the second ion implant angle is normal to the surface of the substrate.

8. The semiconductor device of claim 1, wherein the first impurity region extends beneath at least a portion of the gate electrode.

9. The semiconductor device of claim 1, wherein the first impurity region extends further laterally under the gate electrode than the second impurity region.

10. A semiconductor device comprising:

a substrate having a gate electrode formed thereon;

a notched spacer formed alongside the gate electrode such that the notched spacer does not contact the substrate, the notched spacer being a single homogeneous spacer; and

a second spacer formed alongside the notched spacer.

11. The semiconductor device of claim 10, wherein the notched spacer is formed of silicon dioxide.

12. The semiconductor device of claim 10, wherein the notched spacer is formed of silicon nitride.

13. The semiconductor device of claim 10, wherein the second spacer is formed of a material selected from the group consisting essentially of silicon dioxide and silicon nitride.

14. The semiconductor device of claim 10, further comprising a first ion implant region extending beneath at least a portion of the gate electrode.

15. The semiconductor device of claim 10, further comprising a first ion implant region and a second ion implant region, the second ion implant region being formed by an ion implant at an angle normal to the surface of the substrate wherein the second spacer acts as a mask, and the first ion implant region extending further laterally under the gate electrode than the second impurity region.

16. A method of forming a semiconductor device, the method comprising:

forming a gate electrode on a substrate, the substrate having a first conductivity type;

forming a notched spacer alongside the gate electrode such that the notched spacer is thinner along the surface of the substrate, the notched spacer comprising a single homogenous layer;

performing a first ion implant wherein only the gate electrode and the notched spacer act as masks during the first ion implant, the first ion implant using ions of the first conductivity type; and

performing one or more second ion implants using ions of a second conductivity type.

17. The method of claim 16, wherein the step of forming a notched spacer comprises forming a first layer and a second layer, forming a mask out of the second layer on the first layer such that the first layer alongside the gate electrode is covered by the mask, etching the first layer such that the first layer along the surface of the substrate next to the gate electrode is removed, removing the mask.

18. The method of claim 17, wherein the mask is formed of silicon nitride.

19. The method of claim 17, wherein the mask is formed of silicon oxide.

20. The method of claim 16, wherein the step of performing a first ion implant is performed by implanting ions at an oblique angle to the substrate such that impurities of the first conductivity type are implanted in the substrate below the gate electrode.

21. The method of claim 16, wherein the step of performing one or more second ion implants are performed at an angle normal to the surface of the substrate.

22. The method of claim 16, wherein the notched spacer is formed of silicon dioxide.

23. The method of claim 16, wherein the notched spacer is formed of silicon nitride.

24. A method of forming a semiconductor device, the method comprising:

forming a gate electrode on a substrate, the substrate having a first conductivity type;

forming a first layer over the substrate and the gate electrode;

forming a second layer over the first layer;

removing a portion of the second layer such that a spacer mask is formed on the first layer on the side of the gate electrode;

etching the first layer to form a notched spacer wherein the spacer mask acts as a mask, the etching process removing at least a portion of the second layer along the surface of the substrate;

removing the spacer mask;

performing a first ion implant after the spacer mask has been removed, the first ion implant using ions of the first conductivity type; and

performing one or more second ion implants using ions of a second conductivity type.

25. The method of claim 24, wherein the step of performing a first ion implant is performed by implanting ions at an oblique angle to the substrate such that impurities of the first conductivity type are implanted in the substrate below the gate electrode.

26. The method of claim 24, wherein the step of performing one or more second ion implants are performed at an angle normal to the surface of the substrate.

27. The method of claim 24, wherein the first layer is formed of silicon dioxide.

28. The method of claim 24, wherein the second layer is formed of silicon nitride.